REMARKS

Claims 1, 3-7,9, and 10 are pending.

Claim 1 has been amended to remove recital of reference numeral "12" in parenthesis.

Claim 1 is also being amended to recite that a network timing difference (as opposed to a "clock rate") between the first network and the second network is reduced in sufficiently small predetermined step values (as opposed to "sufficiently small values"). Basis for the use of the phrase "timing difference" can be found in claim 7, and basis for the words "predetermined step" can be found in paragraph [0037] of the published specification (US 2007/0116058). Corresponding similar amendments have been made to claims 7 and 10 to ensure consistency between the independent claims. Additionally, claim 10 has been amended by the addition of the phrase "using the sign of the network timing difference between the first network and the second network" to ensure consistence between the claims. No new matter is being added and all amendments have been made for clarity purposes.

In numbered paragraphs 1 and 2 on page 2 of the Office Action, Claims 1, 3-7, 9, and 10 are rejected under U.S.C. 102(e) as being anticipated by US patent no. 7,058,729 (hereinafter referred to as "Le Scolan").

Le Scolan relates to a method of synchronizing between two networks (Col. 1, lines 8-9). In particular, Le Scolan is concerned with solving problems associated with the synchronization of two IEEE 1394-1995 buses via a radio frequency signal (col. 3, lines 43-54, col. 4, lines 30-52, and Figure 2). Le Scolan teaches the synchronization of two buses (networks) to be carried out in the following manner.

Col. 13, line 1-col. 14, line 15 (and Figures 5a and 5b) explains that a first interconnection node, A, of a first network measures a time difference by an associated first network cycle master between two frames in the first network and sends the measured value inside a frame, which a second interconnection node, B, of a second network is able to receive via a radio frequency signal. At the second interconnection node, B, the second interconnection node, B, makes the same measurement based on the received radio frequency signal (col. 14, lines 19-55) and calculates the difference between the time measurement performed by the first interconnection node, A, and the second interconnection node, B (col. 15, lines 18-

31). The result is the clock difference between the first and second interconnection nodes A and B. Based upon the assumption that the first interconnection node A is synchronized to the first network cycle master of the first network and the second interconnection node, B, is synchronized to an associated network cycle master for the second network, the result characterizes the difference of a cycle between both networks, i.e. a frequency difference (col. 15, lines 33-36).

Since the first and second networks described in Le Scolan have respective network cycle masters, for each network a single node dictates the timing in the network. Consequently, adjustment of the timing of the second network so as to be in synchronism with the first network is simply a matter of adjusting the network cycle master of the second network. All other nodes in the second network then follow the timing dictated by the network cycle master (col. 15, lines 45-48).

Referring to claim 1, claim 1 recites a computer node for operating in a system comprising a plurality of network clusters, wherein a number of network clusters comprise a plurality of computer nodes. Claim 1 recites that the computer node comprises:

- a synchronization unit for comparing network timing information for a first network with network timing information for a second network and
- for communicating to the first network a sign of the difference between the first network timing information and the second network timing information
- to allow the first network to alter its network timing information using the sign of the difference
- wherein a network timing difference between the first network and the second network is reduced in sufficiently small predetermined step values to avoid loss of local synchronization with other computer nodes in its network cluster.

It is submitted that the Le Scolan fails to disclose that the first network is allowed to alter its network timing information using the sign of the difference between the first and second network timing information and the timing difference between the first and second network is reduced in sufficiently small **predetermined** step values to avoid loss of local synchronization with other computer nodes in its network cluster, as recited in claim 1.

By way of further explanation, in some embodiments, the computer node of claim 1 does not have to perform exact measurements of timing information differences between the first and second networks, e.g. using counters. It is sufficient to determine which network is faster (frequency) and which network leads (phase). To achieve this, only the sign associated with the difference in timing information is required. The result of the each determination (+/0/-) only needs three or four bits to store for transmission/distribution in some embodiments.

The first and second networks in the system of claim 1 comprising the plurality of network clusters, do not employ respective network cycle masters and hence authoritative master time sources; the nodes in the first network stay synchronized by using a distributed clock synchronization. To align the timing in the first network to the timing of the second network, all nodes of the first network need to change their respective clock timing at the same time. The solution of Le Scolan places reliance upon timing information being provided by the network cycle masters. However, not all nodes in the first network necessarily receive the timing information and so the transmission of the complete correction value as opposed to use of smaller steps can result in some nodes in the first network being correctly synchronizes and others remaining unsynchronized with respect to the second network. Consequently, situations can arise where the nodes within the first network are not "locally" synchronised with each other.

In contrast, all nodes that do receive the sign of the difference between the timing information of the first and second networks respond by adjusting their respective clock by the predetermined small step value, as recited in claim 1. As a result of this response to the sign in a small predetermined way, as opposed to a full correction value advocated by Le Scolan, nodes in the first network that fail to receive the timing adjustment indication (the sign of the difference) remain synchronized, because the change triggered by the timing adjustment indication is sufficiently small to prevent loss of synchronization between nodes in the first network. This technique therefore enhances fault tolerance in the first network.

As intimated above, another advantage is a more efficient use of bandwidth needed to achieve synchronization, because by simply communicating a need to change timing information associated with the first network using the sign of the difference, the distribution of the measurement result in the first network requires only three or four bits in some embodiments as compared with one or two integer

values. Additionally, due to the simple nature of the determination of the need to synchronize and the initiation of the synchronization, no counters for measurement purposes are required in some embodiments.

In view of the reasoning provided above, Applicant submits that Le Scolan does not anticipate Claim 1.

Claims 3-6 depend from claim 1. By virtue of this dependence, claims 3-6 are also new.

Claim 7 is directed to a system comprising a plurality of network clusters and corresponds to the computer node of claim 1. Consequently, the arguments set forth above in support of claim 1 apply equally to claim 7. As such, it is therefore respectfully submitted that the Le Scolan fails to teach that the <u>sign</u> of the difference between the first and second network timing information is used to reduce a network clock rate of the first network uses <u>and</u> the network clock rate of the first network is reduced in <u>sufficiently small **predetermined** step values</u> to avoid loss of local synchronization with other computer nodes in its network cluster, as recited in claim 7.

In view of the reasoning provided above, Applicant submits that Le Scolan does not anticipate claim 7.

Claim 8 depends from claim 7. By virtue of this dependence, claim 8 is also new.

Claim 10 is directed to a method of allowing synchronization of a first network and a second network and corresponds to the computer node of claim 1. Consequently, the arguments set forth above in support of claim 1 apply equally to claim 10. As such, it is therefore respectfully submitted that the Le Scolan fails to teach that the <u>sign</u> of the difference between the first and second network timing information is used to reduce a network clock rate of the first network uses <u>and</u> the network clock rate of the first network is reduced in <u>sufficiently small **predetermined** step values</u> to avoid loss of local synchronization with other computer nodes in its network cluster, as recited in claim 10.

In view of the reasoning provided above, Applicant submits that Le Scolan does not anticipate claim 10.

The case is believed to be in condition for allowance and notice to such effect is respectfully requested. If there is any issue that may be resolved, the Examiner is respectfully requested to telephone the undersigned.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

SEND CORRESPONDENCE TO:

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